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ABSTRACT

This publication is part of a series of reports that describes the results of the first year of a study of federally funded programs designed to introduce and spread innovative practices in public schools. Over several years, the study will examine innovative educational projects funded under four federal programs, including Title III of the Elementary and Secondary Education Act (ESEA), Title VII of the ESEA, the 1968 amendments to the Vocational Education Act, and the Right-to-Read Program. Purpose of the study is to examine the nature, permanence, and extent of dissemination of innovation associated with the various federal programs and with various federal, state, and local practices. A series of five reports presents the results of the study's first year; Volume 4 of the series summarizes the findings of the other volumes, synthesizes extensive data on the program strategy and management of each federal program, and discusses alternative federal strategies for promoting educational innovation. This report in turn summarizes Volume 4 and is designed to present in condensed form the study's approach and findings. (Author/JG)

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FEDERAL PROGRAMS SUPPORTING EDUCATIONAL CHANGE, VOL. IV (ABRIDGED): A SUMMARY OF THE FINDINGS IN REVIEW

PREPARED FOR THE U.S. OFFICE OF EDUCATION,
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

PAUL BERMAN, PETER W. GREENWOOD,
MILBREY WALLIN McLAUGHLIN, JOHN PINCUS

R-1589/4-HEW (ABR.)
APRIL 1975

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PREFACE

Rand is conducting, under the sponsorship of the U.S. Office of Education, a several-year study of federally funded programs designed to introduce and spread innovative practices in public schools. These change agent programs normally offer temporary federal funding to school districts as "seed money." If an innovation is successful, it is assumed that the district will continue and disseminate part or all of the project using other sources of funds. The Rand study examines four such federal change agent programs—Elementary and Secondary Education Act Title III, Innovative Projects; Elementary and Secondary Education Act Title VII, Bilingual Projects; Vocational Education Act, 1968 Amendments, Part D, Exemplary Programs; and the Right-To-Read Program. The study identifies what tends to promote various kinds of changes in the schools and what doesn't; in particular, the Rand study will identify for federal, state, and local policymakers the nature, permanence, and extent of dissemination of innovations that are associated with the various federal programs and with various federal, state, and local practices.

A series of five reports describes the results of the first year of the Rand study (July 1973 to July 1974). Volume I (R-1589/1-HEW, *A Model of Educational Change)* provides a theoretical perspective for the Rand study by analyzing the current state of knowledge of planned change in education and by proposing a conceptual model of factors affecting change processes within school districts.[1]

Volume II (R-1589/2-HEW, *Factors Affecting Change Agent Projects)* contains the analysis of survey data collected from a national sample of 293 projects in 18 states during November and December 1973.

Volume III (R-1589/3-HEW, *The Process of Change)* summarizes the results of 29 case studies of change agent projects conducted by Rand staff members and consultants in 25 school districts during April and May 1974. These case studies were chosen from the original sample of 293 projects initially surveyed. Volume III also describes the role of state education agencies in choosing and disseminating the change agent projects.

Four technical appendixes to Vol. III describe in detail the federal program management approach, state education agency participation, and case studies for each of the programs in the study: Title III, App. A; Reading, App. B; Bilingual Education, App. C; and Career Education, App. D. Appendix A should be of particular interest to researchers or practitioners concerned with the introduction of new approaches to classroom instruction.

Vol. IV (R-1589/4-HEW, *The Findings in Review)* summarizes the findings of Vols. I, II, and III, and also synthesizes extensive data collected by Rand on federal-level program strategy and management for each of the change agent programs. Volume IV also includes a discussion of alternative federal strategies for promoting innovation.

[1] Because of Rand's interest in advancing knowledge of organizational behavior in educational institutions, the research underlying this report was supported in part by an allocation of Rand corporate research funds.

This report summarizes Vol. IV and is designed to present in a condensed form the study's approach and findings.

Volume V (R-1589/5-HEW, *Executive Summary*) presents a distillation of the study's methods and results for a general audience.

Subsequent research will collect additional data on Titles III and VII of ESEA, with particular focus on projects whose federal funding has expired.

A SUMMARY OF THE FINDINGS IN REVIEW

BACKGROUND

This is a report on the first year (July 1973 to July 1974) of Rand's work in a study of four federal programs (ESEA Title III; ESEA Title VII; Vocational Education, 1968 Amendments, Part D; and Right-To-Read) aimed at promoting educational change in the public schools by paying for the costs of innovative projects for a trial period. This study, commissioned by the U.S. Office of Education, aims to help improve the ways that policies are made and carried out by describing how the process of innovation operates for these projects and by trying to account for the factors that affect their outcomes. The second phase of the work, covering the 1974-75 and 1975-76 school years, will investigate how innovative projects are continued and spread after federal support ends.

The four programs rest on common assumptions, but each has its own focus and management strategy. The common assumptions are:

- American education should be doing better with respect to a variety of goals.
- Educational practices can be improved within the existing educational structure.
- Change can be introduced and sustained by providing "seed money" to some districts to encourage innovations that, if successful, will be continued in the original sites and will be adopted selectively by other schools and districts.

Each of the programs is also distinct:

- *Title III* (funded at a $120-$190 million annual level in recent years) has the broadest aims. It is designed to encourage educational improvement at the school and district level by introducing new practices and by spreading existing model practices to districts that are not aware of them. In recent years 85 percent of the funding has been state-administered, and the remaining 15 percent directly administered by USOE.
- *Right-To-Read* ($12 million annually) seeks to create a national educational priority for reading, particularly among disadvantaged students. This study focuses on one aspect of the program, administered by USOE—demonstration projects at the school level.
- *Vocational Education, Part D* ($16 million annually) was designed to create exemplary programs that would enhance career awareness and readiness. Half of the funds are administered directly by USOE and the balance by the states.
- *Title VII, Bilingual Education* ($45-$85 million annually) is aimed at providing model projects for children of limited English-speaking ability, and

also to maintain and encourage "cultural pluralism" in American education, with strong political support from many people of Spanish-language origin.

THE RAND STUDY

In light of numerous findings that have raised questions about the effectiveness and transferability of educational innovation, USOE asked Rand to focus on four questions in the change agent study:

- How should the nature and extent of innovation and dissemination of change in the public schools be assessed?
- How do school districts select, introduce, implement, incorporate, and spread different kinds of innovations?
- How do differences in the federal programs, in project characteristics, and in local settings affect how projects are begun, carried out, continued on local funds, and disseminated?
- What should federal policies be toward educational innovation in light of the political, financial, and organizational constraints that the federal government faces in its dealings with the public schools?

The research design for the first year of the study approached these issues through four major research tasks:

1. An extensive review of the literature on educational innovations, leading to development of a theoretical approach toward the subject that serves as the basis for data collection and analysis.
2. A nationwide survey in 18 states of 293 change agent projects, each in its last or next to last year of federal funding. The survey, conducted for Rand by the National Opinion Research Center in December 1973 and January 1974, included personal interviews with 1735 people at all levels in the school district, from superintendent to classroom teacher. It sought to find out what factors influence the outcomes of change agent projects. These survey data, supplemented by school district data, were analyzed using such statistical procedures as multiple regression and factor analysis.
3. Field studies conducted in April and May 1973 by Rand staff at 29 projects, drawn from the survey sample. The staff observed the projects in operation in classrooms and schools and interviewed project participants and district officials in order to understand how the innovative process worked. The fieldwork sample was drawn so as to provide a comparison of similar innovations operating in different local settings and supported by different federal programs. In particular, the fieldwork cases included classroom organization, staff development, reading, bilingual, and career education projects.
4. Rand staff interviews with federal and SEA officials who work on the four change agent programs. These included telephone interviews with 54 SEA officials in 18 states, visits to 9 SEAs for more detailed personal interviews, and a series of personal interviews with officials at USOE and the Department of Health, Education, and Welfare (HEW).

In the final phase of the work (November 1974 to September 1976), Rand will examine what happens to projects in the two largest change agent programs when federal funding stops. The work will again be based on surveys and field studies and will include Title III and Title VII projects that were visited during 1973-74. This phase of the work will allow us to test the first-year findings and will also allow us to test hypotheses about continuation and dissemination that were not explored during the first year.

THE RESEARCH APPROACH

As part of its first major task, Rand reviewed the literature on educational innovations and found that the past decade of federal efforts to stimulate change in local school systems has led to disappointing results. This apparent disappointment may be due less to inadequate educational technologies or treatments than to the way these promising treatments were implemented in the local institutional setting. We concluded that an essential issue for policymakers promoting change was to develop a systematic understanding of implementation.

Therefore, to guide the research, we focused on: (1) developing a model of the innovative process that centered on implementation, (2) defining outcome measures that assess the effectiveness of implementation and the extent to which the change agent projects meet the policy goals of project continuation and dissemination, and (3) identifying factors affecting the innovative process and, consequently, the outcomes of innovative projects.

The Model of the Innovative Process

The model hypothesized three stages in the life of an innovative project:

- *Initiation*, when LEA officials plan projects and decide which ones to support.
- *Implementation*, when the project confronts the reality of the institutional setting and project plans must be translated into practice. We hypothesize that effective implementation requires *mutual adaptation* between the project as planned and the institutional setting, in which each must adjust to the demands of the other.
- *Incorporation*, when the innovative practice loses its "special project" status and becomes part of the routinized behavior of the district. In this phase the project may be continued in whole or in part as a result of deliberate district decisions, or aspects of the innovation may be incorporated by individual teachers with or without formal district support.

Defining Outcomes

Because innovative projects must be implemented before they can affect students and because they are seldom implemented as planned, we defined project "outcomes" that measured the effectiveness of implementation:

- *Perceived success:* the relative extent to which project participants believed that goals were achieved.

- *Change in behavior:* the type and extent of change in teacher and administrator behavior as perceived by participants.
- *Fidelity of implementation:* the extent to which the project was implemented as originally planned.

Another "outcome" measure involved the incorporation stage:

- *(Expected) continuation:* the extent to which the LEA continued project activities after federal funds were withdrawn.[1]

Factors Affecting Implementation and Continuation

We hypothesized that project outcomes are largely determined by the interplay among characteristics of the project, the institutional setting, and federal policies. We developed measures for each of these factors, which were used to determine their relative effects on project outcomes.

FINDINGS

Our findings fall into two categories: those relating to the process of innovation and those relating to factors affecting the innovative process and thereby project outcomes.

The Process of Innovation

During the *initiation* stage, the interaction of several factors tended to result in initiation processes that could be characterized either as opportunistic (designed primarily to take advantage of the availability of external funding, with relatively little LEA commitment to project goals) or as problem solving (when the project was seen as helping to meet local needs in light of present realities and expected future realities). The motivation that characterized opportunism or problem solving had pervasive effects on implementation and incorporation.

Our evidence suggests that the "search for alternatives" traditionally assumed to be characteristic of the problem-solving approach to innovation did not occur. In developing projects, LEAs used information or treatments that were already known to local district personnel. This may mean that LEA staff intuitively feel that the success and suitability of an innovation depend primarily on local conditions, a view that our evidence supports. Thus, local administrators are likely to be skeptical about the reported "success" of educational methods in other districts and tend to rely on the advice of local professionals who have a thorough knowledge of particular local conditions.

The *implementation* stage was not a simple application of a well-defined technology to a well-understood setting. Instead, it implied complex and only partly predictable interactions between the project and the setting. During this stage, projects that were likely to be implemented effectively were characterized by mutual adaptation in which the innovation was modified, and the formal and informal

[1] In the first year of the Rand change agent study, we examined projects in their last years of federal funding, and hence were able to measure only *expected* continuation.

organizational relationships among staff and among teachers and students were altered. In other cases, effective implementation did not occur. Instead, projects were "implemented" in pro forma fashion, or simply broke down and were not implemented at all, or were coopted by project participants so that the project was changed to fit traditional patterns.

The type of implementation process— mutual adaptation, cooptation, pro forma implementation, or breakdown—that characterized a project depended on three considerations: the motivations and circumstances involved in the project's initiation, its substance and scope of change being attempted, and its implementation strategy. Mutual adaptation occurred only in problem-solving projects, notably in such projects as open-classroom approaches that were highly complex and required considerable behavioral change on the part of teachers and administrators.

Incorporation could take place in different forms, ranging from assimilation of new practices by the project staff, with no formal LEA continuation decision required, to a conscious decision by the district to commit resources and support to extend the project to all or part of the district.

At the classroom level, projects that replaced existing practice were more likely to be incorporated than those that supplemented the existing curriculum. Incorporation was more likely under the following conditions: an emphasis on training rather than on the introduction of new technology, training focused on practical classroom issues rather than on theoretical concepts, and local development of materials rather than reliance on outside consultants. Effects of federal programs on expected incorporation were indirect. Projects with extensive provision for training and staff development, such as some Title III classroom reorganization and staff development innovations, were most likely to have lasting effects on the staff. Therefore, programs funding these innovations indirectly fostered incorporation.

At the district level, continuation decisions were based on how LEA officials perceived the project—whether it was (1) "successful," (2) affordable, (3) important to the district's priorities, and (4) politically acceptable. In the case of opportunistic projects, the answer to the first three points was usually negative, while in the case of problem-soiving projects the answer to all four was often positive—in effect, the pattern of expected continuation tended to follow the pattern evidenced during initiation. It is important to note that the superintendents' perception of project "success" seemed to reflect attitudes formed during initiation rather than after evaluation, which was seldom considered seriously as a basis for making decisions.

Factors Affecting Implementation and Continuation

We hypothesized that the following variables might substantially affect implementation and continuation:

1. Project characteristics (educational treatment, resource level, substance and scope of proposed change, and implementation strategy).
2. Institutional setting (organizational climate and characteristics of principal actors).
3. Federal policies.

The project characteristics that had important effects on implementation outcomes and continuation were the project's implementation strategies (i.e., the deci-

sions made about how the innovation would be implemented) and the substance and scope of the proposed organizational change. Effective implementation strategies included on-line planning, practical staff training, local development of materials, and a "critical mass" of staff working on the project so that the individual innovator did not become too isolated. In respect to substance and scope of change, the most important elements were: (1) centrality (the perceived educational priority to the LEA); (2) a requirement for change in teacher behavior; (3) comprehensive new treatments that were complex in that they required a number of changes by a number of people; and (4) consonance between the values and goals of the project and those of the staff and the district.

Other project characteristics, such as resource level and type of educational treatment or technology, had relatively little effect on project outcomes.

The *institutional setting* is a crucially important factor in effective implementation. The key elements were high teacher morale, support from the principal and from district administrators, and teacher willingness to make extra efforts. These conditions made mutual adaptation more likely, and tended to occur more frequently in elementary schools than in high schools.

A receptive institutional setting provides explicit, steady support for change agent efforts and is a necessary but not sufficient condition for effective implementation. Mutual adaptation—which we believe is the key to serious change—requires an effective implementation strategy, one that takes advantage of institutional support. Indeed, the components of the implementation strategy that we found to be most effective—adaptive planning, staff training keyed to the local setting, and local materials development—were those that encouraged strong support and commitment of administrators and staff.

Federal policies primarily affected only the initiation stage by inducing districts to adopt innovations in issues of federal concern. But these initial influences did not have major effects on those factors in the setting and in the project that mostly determine the course and outcomes of the innovation. Consequently, federal policies had little influence on effective implementation and outcomes.

Because the policies common to the federal change agent programs had limited influence on the innovative process, each federal program could affect project outcomes only at the margin. Within this latitude, the differences in management strategies of the programs were related to significant but statistically small effects on implementation and project outcomes.

Conclusion

Our data show that a receptive institutional setting is a necessary condition but not a sufficient one for effective implementation. An implementation strategy that promotes mutual adaptation is essential.

The main factors affecting innovations were the institutional setting, particularly organizational climate and motivations of participants; the implementation strategy employed by local innovators to install the project; and the scope of change implied by the project relative to its setting. Neither the technology nor the project resources nor the different federal management strategies influenced outcomes in major ways. Thus, project outcomes did not depend primarily on outside influence but on internal factors and local decisions.

TENTATIVE POLICY IMPLICATIONS

Our first-year research suggests that the following findings express the realities of LEA behavior in the innovative process:

1. Implementation—rather than the adoption of a technology, the availability of information about it, or the level of funds committed to it—dominates the innovative process and its outcomes.
2. Effective implementation depends on the receptivity of the institutional setting to change.
3. Effective implementation is characterized by the process of mutual adaptation.
4. Local school systems vary in their capacity to deal with innovations and with the stages of the innovative process.

The policy implications of these four findings are:

1. Policy should be concerned with more than the mere adoption of change agent projects. Federal change agent policy clearly stimulated the initiation of special projects, but had little effect on the quality or seriousness of the implementation efforts.
2. The critical significance of the institutional setting should come as no surprise to policymakers. If educational technologies are not altered and adapted to local conditions, they are ineffective; information about practices elsewhere seldom goes beyond the level of simple awareness; federal money is used for its intended purpose only if the federal purpose is congruent with local plans.

   School districts use these federal resources, but typically do not on that account change their commitments, motivations, or concern with innovation. Unless the institution is receptive to change, it is unlikely to be stimulated by these policy instruments. We believe that policies could be designed to enhance receptivity to change.
3. If, given a receptive institutional setting, a project's outcomes depend on local decisions about how the project will be implemented, federal policymakers might consider ways of encouraging mutual adaptation strategies, which we believe are the key to effective implementation.
4. Federal change agent programs generally awarded fixed-term grants regardless of the school districts' ability to introduce and sustain the particular innovations that they proposed. Yet we observed similar innovations being approached and installed very differently by school districts according to their capacities to innovate. Rather than making blanket awards of a fixed number of years, federal change agent policies might be keyed to the stages of innovation and might promote the development of the school districts' capacity to deal with each stage.

Generally speaking, there appear to be many possibilities for federal policy to affect the innovation process despite its essentially local nature and the autonomy of school districts. Each possibility for federal leverage raises problems. This interim report offers our preliminary thoughts about new policy directions. But, more important, it tries to provide some information and hypotheses that would help policymakers balance the possibilities and the problems that arise from federal efforts to help schools change themselves.